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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,773	03/25/2004	Zbigniew Zurecki	06487 USA	7938

23543 7590 08/22/2006

AIR PRODUCTS AND CHEMICALS, INC.  
PATENT DEPARTMENT  
7201 HAMILTON BOULEVARD  
ALLENTOWN, PA 181951501

EXAMINER
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DOERRLER, WILLIAM CHARLES

ART UNIT	PAPER NUMBER
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3744

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/809,773	ZURECKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	William C. Doerler	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14, 37-41 and 55-60 is/are allowed.
- 6) ☒ Claim(s) 1-9, 15-36 and 42-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3-25-04, 1-24-06, 9-30-04</u><br><u>1-27-06</u> | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The Gunnberg thesis from the 3-25-2004 IDS has been crossed through because it cannot be found in the file. It will be considered if applicant submits a new copy with the response.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4,7-9,15-22,24-31,33,34,37,38,42,43,45-49 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Hong (WO99-60079).

Hong discloses a machining process which sprays liquid cryogen on the intersection of the workpiece and the tool. This is disclosed to make the workpiece harder in line 23 of column 2. Since Hong's method is the same as applicant's claimed method, the workpieces are seen to have the same properties. This is especially true for claims 16-22 which are product by process claims. Since the process of Hong is the same as applicant's, the products produced thereby are seen as having the same properties.

Claims 1-4,7,8,15-22,24-30,34,35,37,38,42,43,45-47,49 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Zurecki et al (WO02-096598).

Applicants' earlier PCT discloses a machining process which sprays liquid cryogen on the intersection of the workpiece and the tool. This is disclosed to make the tool harder and stronger. Since applicant's earlier method is the same as applicant's currently claimed method, the workpieces are seen to have the same properties. This is especially true for claims 16-22 which are product by process claims. Since the process of applicant's earlier publication is the same as applicant's current method, the products produced thereby are seen as having the same properties. One of ordinary skill in the art would be led to use applicants' earlier method to prolong the life of the tool involved. In so doing, the workpieces produced by the two processes will be inherently have the same properties as they process the workpieces the same way.

Claims 1-3,7,8,15-30,34,35 and 42-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Hong (5,901,623).

Hong discloses spraying cryogen onto a workpiece at the site where the tool meets the workpiece. Lines 60-62 of column 1 state that the material gets harder. Lines 63 and 64 of column 9 state that the surface of the workpiece is improved, this is seen as improving the surface integrity of the workpiece during the shaping. In regard to claims 8 and 35, the cryogen is seen as performing heat treatment on the piece. Since Hong's method is the same as applicant's claimed method, the workpieces are seen to have the same properties. This is especially true for claims 16-22 which are product by process claims. Since the process of Hong is the same as applicant's, the products

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produced thereby are seen as having the same properties. In regard to claims 25,27,52 and 54, Hong is seen to eliminate the need for cleaning the piece. Claims 23,44,48 and 50 are also seen as product by process claims. While the reference may be silent as to the characteristics being claimed, these characteristics are seen as inherent as the two processes (Hong's and applicants') are the same.

Claims 1-3,7,8,15-30,34,35 and 42-54 are rejected under 35 U.S.C. 102(e) as being anticipated by Kraemer (6,652,200).

Kraemer discloses spraying cryogen onto a workpiece at the site where the tool meets the workpiece. This is seen as improving the surface integrity of the workpiece during the shaping the same as applicant's process. In regard to claims 8 and 35, the cryogen is seen as performing heat treatment on the piece. Since Kraemer's method is the same as applicant's claimed method, the workpieces are seen to have the same properties. This is especially true for claims 16-22 which are product by process claims. Since the process of Kraemer is the same as applicant's, the products produced thereby are seen as having the same properties. In regard to claims 25,27,52 and 54, Kraemer is seen to eliminate the need for cleaning the piece. Claims 23,44,48 and 50 are also seen as product by process claims. While the reference may be silent as to the characteristics being claimed, these characteristics are seen as inherent as the two processes (Kraemer's and applicants') are the same.

Claims 1-9,15-36 and 42-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Dudley (3,971,114).

Dudley discloses spraying cryogen onto a workpiece at the site where the tool meets the workpiece at an angle to avoid any chips. Line 38 of column 4 states that the surface of the surface of the workpiece is improved. This is seen as improving the surface integrity of the workpiece during the shaping. In regard to claims 8 and 35, the cryogen is seen as performing heat treatment on the piece. Since Dudley's method is the same as applicant's claimed method, the workpieces are seen to have the same properties. This is especially true for claims 16-22 which are product by process claims. Since the process of Dudley is the same as applicant's, the products produced thereby are seen as having the same properties. In regard to claims 25,27,52 and 54, Dudley is seen to eliminate the need for cleaning the piece. Claims 23,44,48 and 50 are also seen as product by process claims. While the reference may be silent as to the characteristics being claimed, these characteristics are seen as inherent as the two processes (Dudley's and applicants') are the same. The figures of Dudley show the impingement angle to be within applicants' claimed range. The spread angle is seen as between 0 and 180 degrees as a 0 degree spread angle is perfectly straight (any pressurized fluid coming from a nozzle will spread slightly), and a 180 degree spread angle requires the flow to return back to the nozzle.

***Allowable Subject Matter***

Claims 10-14,37-41 and 55-60 are allowed.

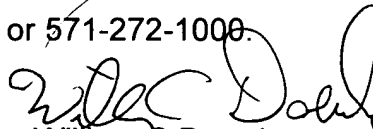
**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brehm et al, Kamody, Groll, Lightstone and Philip show cryogenic processing for workpieces.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Doerrler whose telephone number is (571) 272-4807. The examiner can normally be reached on Monday-Friday 6:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
William C Doerrler  
Primary Examiner  
Art Unit 3744

WCD